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TWO NEW SPECIES OF *CERATOCAPSUS* FROM NORTH AMERICA (HETEROPTERA: MIRIDAE)

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Abstract.—Two new species of the plant bug genus *Ceratocapsus* (Heteroptera) are recognized from North America. *Ceratocapsus* ***cunealis*** is described from British Columbia and Idaho and *C.* ***keltoni*** from Ohio and Ontario. Male genitalia are illustrated and diagnoses are provided to help separate the new taxa from known related species.

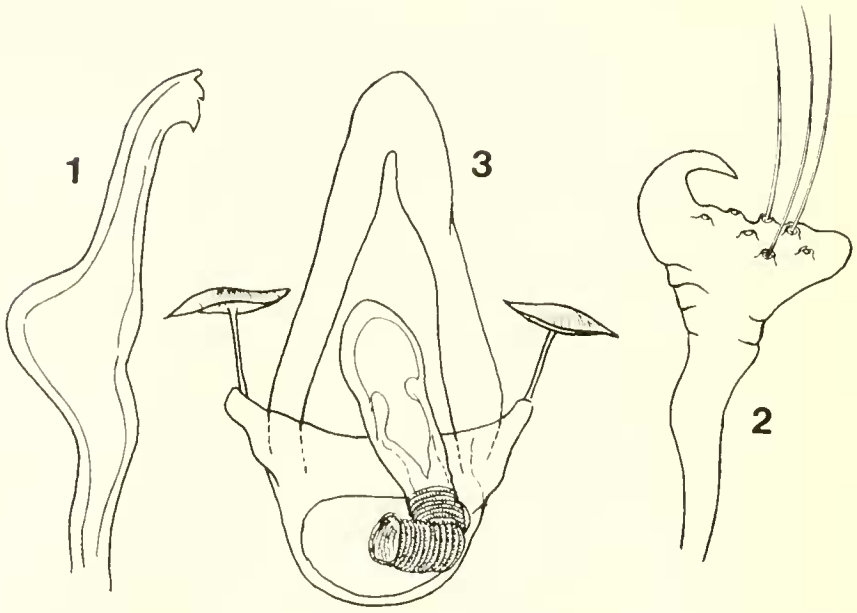
The two new species of *Ceratocapsus* presented in this paper are described ahead of a forthcoming revision of the genus to provide names needed for two identification manuals on the Miridae of Canada now being prepared by Leonard A. Kelton of the Biosystematic Research Institute, Agriculture Canada, Ottawa, Ontario. Type-specimens are deposited in the Canadian National Collection (CNC) at the Biosystematic Research Institute and the U.S. National Museum of Natural History (USNM), Washington, D.C.

The genus *Ceratocapsus* is a large New World group, with more than 60 species listed in the Carvalho Catalog (1958). More recently, Henry (1979) described seven new species from the Eastern United States, and Carvalho et al. (1983) described 45 new species from South America. Although little is known of the habits of members of this genus, Wheeler and Henry (1979) observed that *C. modestus* (Uhler) preyed on eggs of grape phylloxera, *Daktulosphaira vitifoliae* (Fitch), and Carvalho et al. (1983) reported that *C. dispersus* Carvalho and Fontes has been taken preying on pink bollworm, *Heliothis virescens* (F.) in Peru. Henry (in Carvalho et al.) noted that immatures of most eastern United States species of *Ceratocapsus* require some animal food to complete development in the laboratory, indicating that, although most species are host-plant specific, they probably are largely predaceous on co-existing arthropod eggs and immatures.

Ceratocapsus cunealis Henry, New Species

Figs. 1–3

Description.—*Male:* Length 2.92–3.24 mm, width 1.16–1.24 mm, general coloration brown. *Head:* Width 0.66–0.68 mm, vertex 0.20–0.24 mm; chestnut brown, frons transversely striated, basal carina distinct; set with relatively long, simple setae, especially on vertex. *Rostrum:* Length 0.98–1.04 mm, extending to bases of metacoxae. *Antenna:* Yellowish brown, segment IV and apex of III brownish to reddish brown in some specimens; segments II–IV uniformly slender,



Figs. 1–3. Male genitalia of *Ceratocapsus cunealis*. 1, Left paramere. 2, Right paramere. 3, Aedeagus.

segment I slightly thicker; segment I, length 0.24–0.26 mm, II, 0.88–1.04 mm, III, 0.54–0.60 mm, IV, 0.40–0.42 mm. *Pronotum:* Length 0.48–0.50 mm, basal width 0.94–1.00 mm; chestnut brown, evenly and finely dark punctured, including calli, set with long, pale, semierect setae, intermixed with short, appressed, silvery, sericeous pubescence, each anterior angle with a single, erect, pilose seta; scutellum colored and punctate as pronotum, with long, erect, simple setae. *Hemelytra:* Pale brown, set with long, erect, simple setae, evenly punctate as on pronotum, each puncture having a single, appressed, sericeous seta; cuneus red, with lateral margin and paracuneus brown; membrane and veins smoky brown. *Venter:* Reddish to chestnut brown, abdomen darker shiny brown on some specimens; ostiolar evaporative area pale, tinged with red. *Legs:* Uniformly pale, yellowish brown, apex of hindfemur and base of hindtibia pale reddish to brown. *Male genitalia:* Left paramere (Fig. 1); right paramere (Fig. 2); aedeagus (Fig. 3).

Female: Length 2.92–3.08 mm, width 1.16–1.25 mm. *Head:* Width 0.64–0.66 mm, vertex 0.30–0.32 mm. *Rostrum:* Length 1.08–1.10 mm. *Antenna:* Segment I, length 0.24–0.26 mm; II, 0.84–0.90 mm; III, 0.48–0.54 mm; IV, 0.34–0.40 mm. *Pronotum:* Length 0.50–0.52 mm, basal width 1.00–1.02 mm.

Very similar to male in color and pubescence, differing mainly in the slightly broader form and proportionately wider vertex.

Type-data.—*Holotype:* ♂, Oliver, British Columbia, 15 Sept. 1953, J. E. H. Martin (CNC). *Paratypes:* 1 ♂, same data as for holotype (CNC); 1 ♀, Richter Pass, Osoyoos, British Columbia, 28 June 1959, L. A. Kelton, on greasewood [*Sarcobatus vermaculatus* (Hook.)Torr.] (CNC); 2 ♂, 1 ♀, Summerland, British Columbia, 2–11 Jul. 1974, L. A. Kelton, on *Clematis* sp. (1 ♂ [CNC]; 1 ♂, 1 ♀ [USNM]); 1 ♂, Vaseaux L., Oliver, British Columbia, 10 Jul. 1959, L. A. Kelton (CNC); 1

♀, Idaho, Owyhee Co., nr. Grand View, 21 June 1982, T. J. Henry, taken beating. *Artemesia* sp. and *Sarcobatus* sp. (USNM).

Etymology.—The name *cunealis* is given to this species to denote the red area of the cuneus that contrasts with the overall reddish-brown coloration of the dorsum.

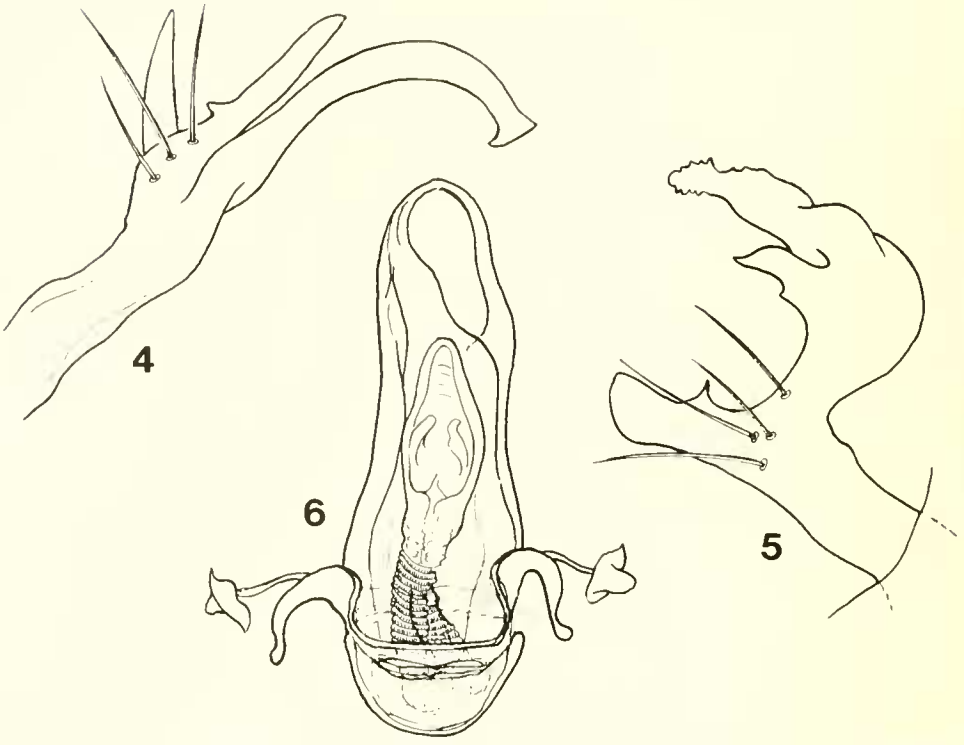
Remarks.—*Ceratocapsus cunealis* belongs to a group of species that probably is not congeneric with *C. lutescens* Reuter, the type-species of *Ceratocapsus.* Henry (1979) defined *Ceratocapsus,* in part, as having a large male genital capsule opening or pygophore that is broadly expanded to accommodate the typically large, and often bizarrely shaped, parameres. *Ceratocapsus cunealis* and a large number of mostly southern and western species form a group that has the pygophore and parameres reduced in size. As indicated in the introduction, a full revision of the genus to study the relationships of all taxa now included in *Ceratocapsus* is in preparation.

This species will run to the genus *Ceratocapsus* using Knight's Miridae of Illinois (1941) or The Miridae of the Nevada Test Site (1968). At the species level, *cunealis* is the only *Ceratocapsus* known to me from British Columbia and the Northwestern United States that is uniformly reddish to chestnut brown, with the cuneus red centrally and has the pronotum, including the calli, evenly punctate and the pygophore reduced, with the parameres simplified or unbranched as in Figs. 1 and 2.

Ceratocapsus keltoni Henry, New Species
Figs. 4–6

Description.—*Male:* Length 4.04–4.40 mm, width 1.68–1.84 mm, general coloration dark brown to fuscous, with paler brown along wing margins and basal area of pronotum. *Head:* Width 0.74–0.80 mm, vertex 0.30–0.34 mm, fuscous, jugum and lorum paler brown, finely alutaceous, meson weakly grooved, eyes sparsely set with short erect setae. *Rostrum:* Length 1.38–1.42 mm, brown, segments I and II darker brown, extending to bases of metacoxae. *Antenna:* Uniformly brown to fuscous; segment I, length 0.36–0.38 mm, II, 1.26–1.32 mm, III, 0.64–0.70 mm, IV, 0.42–0.52 mm. *Pronotum:* Length 0.70–0.74 mm, basal width 1.40–1.42 mm, fuscous, basal margin paler on dark specimens, entire disc pale brown on others, disc punctate, calli impunctate and alutaceous; clothed with suberect, golden setae; scutellum fuscous, apex paler brown, impunctate, transversely rugose. *Hemelytra:* Reddish brown to fuscous, on darkest specimens embolium, corium on base and outer part of apical region, and clavus along commissure paler brown or testaceous; uniformly punctate except on embolium; clothed with recumbent and semierect pale-brown pubescence, intermixed with a few recumbent, silvery, sericeous setae; membrane smoky or fumate, paler near border of cuneus, veins brownish. *Venter:* Fuscous to reddish brown, ostiolar evaporative area reddish brown; abdomen set with semierect, rather long, setae, especially on genital segment. *Legs:* Coxae and femora testaceous, metafemora becoming darker or reddish brown apically, some specimens with a subapical, fuscous blotch on posterior surface; tibiae, tarsi, and claws slightly darker brown. *Male genitalia:* Left paramere (Fig. 4); right paramere (Fig. 5); aedeagus (Fig. 6).

Female: Very similar to male in general form, pubescence, and coloration. Length 4.08 mm, width 1.80 mm. *Head:* Width 0.72 mm, vertex 0.32 mm.



Figs. 4–6. Male genitalia of *Ceratocapsus keltoni*. 4, Left paramere. 5, Right paramere. 6, Aedeagus.

Rostrum: Length 1.28 mm. *Antenna:* Segment I, length 0.30 mm; II, 1.10 mm; III, 0.58 mm; IV, 0.44 mm. *Pronotum:* Length 0.72 mm, basal width 1.34 mm.

Type-data.—*Holotype:* ♂, Ohio, Clark Co., 25 miles west of Columbus, along Interstate 70, 4 Jul. 1979, T. J. Henry, taken on *Salix* sp. (USNM type No. 76358). *Paratypes:* 1 ♂, 1 ♀, same data as for holotype (USNM); 1 ♂, Ontario, Tillsonburg, 20 June 1962, L. A. Kelton and G. Thorpe, on *Salix* (CNC); 1 ♂, Ontario, Kemble, 1 Jul. 1962, G. Thorpe, on willow (CNC).

Etymology.—This species is named in honor of Leonard Kelton (CNC) for his excellent work on the Canadian Miridae and for collecting the first known specimen of this species.

Remarks.—*Ceratocapsus keltoni* belongs in the *pumilus* group of *Ceratocapsus* and is most similar externally to *fuscinus* Knight, *incisus* Knight, and *pumilus* (Uhler). In Knight's (1941) key to the genus it will run to couplet 17 to *incisus*, a species also known to occur on *Salix* spp. *Ceratocapsus keltoni* can be separated from *incisus* by the darker brown antennae and the apically reddish-brown to fuscous femora (rather than uniformly pale-yellow antennae and legs). The basal process (Fig. 5) of the right paramere is thick and blunt, similar to that of *quadrispiculus* Knight, but has a needlelike spine extending perpendicular from near the base; the middle and distal processes of the right paramere compare most closely to *uniformis* Knight. The 3-pronged left paramere (Fig. 4) is distinct from all other species with a strongly down-curved main stem and a blunt nodule at

the base of the middle prong. The aedeagus (Fig. 6) is typical for the *pumilus* group.

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